

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT***COMPLIANCE and ENGINEERING***APPLICATION EVALUATION AND CALCULATIONS**

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Processed by: Hanh Le  
Checked by:  
Date: 9/8/2010

**PERMIT TO CONSTRUCT**

COMPANY NAME: BP WEST COAST PRODUCTS LLC

MAILING ADDRESS: P.O. BOX 6210  
CARSON, CA 90749

EQUIPMENT ADDRESS: 2350 E. 223<sup>rd</sup> Street  
CARSON, CA 90810

Process 4: FRACTIONATION			
SYSTEM 1: SUPERFRACTIONATION UNIT			S4.3, S4.4, S13.2, S56.1
Equipment	ID No.	Emissions and Requirements	Conditions
COLUMN, STABILIZER, NO. 1, DEBUTANIZER, RPV-1035, HEIGHT: 77 FT; DIAMETER: 6 FT 6 IN A/N -499006 512089	D253		
COLUMN, STABILIZER, NO. 2, DEBUTANIZER, RPV-1040, HEIGHT: 117 FT 9 IN; DIAMETER: 6 FT 6 IN A/N -499006 512089	D254		
COLUMN, SOUTH AREA DISOBUTANIZER, RPV-1101, HEIGHT: 127 FT; DIAMETER: 8 FT 6 IN A/N -499006 512089	D255		
COLUMN, STABILIZER, NO. 4, RPV-1117, WITH 40 TRAYS, HEIGHT: 84 FT; DIAMETER: 8 FT A/N -499006 512089	D256		
COLUMN, STABILIZER, NO. 7, RPV-1118, HEIGHT: 62 FT; DIAMETER: 3 FT 6 IN A/N -499006 512089	D257		
COLUMN, NO. 1 NAPHTHA SPLITTLE, RPV-1133, WITH 58 TRAYS, HEIGHT: 112 FT; DIAMETER: 11 FT A/N -499006 512089	D258		
COLUMN, STABILIZER, NO. 9, RPV-1183, HEIGHT: 136 FT; DIAMETER: 12 FT 6 IN A/N -499006 512089	D259		
COLUMN, STABILIZER, NO. 10, RPV-1190, HEIGHT: 110 FT; DIAMETER: 7 FT A/N -499006 512089	D260		
COLUMN, STABILIZER, NO. 11, RPV-1199, HEIGHT: 134 FT; DIAMETER: 8 FT A/N -499006 512089	D261		
COLUMN, NO. 3 DEBUTANIZER, RPV-1208, HEIGHT: 110 FT; DIAMETER: 6 FT A/N -499006 512089	D262		
ACCUMULATOR, NO.1 DEBUTANIZER, RPV-5574, STABILIZER OVERHEAD; LENGTH: 20 FT; DIAMETER: 5 FT A/N -499006 512089	D263		
TANK, SURGE, NO. 1, DEBUTANIZER FEED, RPV 5573, LENGTH: 40 FT; DIAMETER: 8 FT A/N -499006 512089	D264		
ACCUMULATOR, NO.2 DEBUTANIZER OVERHEAD, RPV-1041, HEIGHT: 18 FT 9.5 IN; DIAMETER: 6 FT A/N -499006 512089	D265	BENZENE: (10) [40CFR 61 Subpart FF_02, 12-4-2003];	H23.12

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ACCUMULATOR, RPV-5474, SOUTH AREA DIB OVERHEAD, HEIGHT: 18 FT; DIAMETER: 6 FT A/N -499006 512089	D267		
TANK, SURGE, SOUTH AREA DIB FEED, #5 STABILIZER, RPV-1226, HEIGHT: 30 FT 8 IN; DIAMETER: 10 FT A/N -499006 512089	D268		
ACCUMULATOR, NO. 4 DEBUTANIZER OVERHEAD, RPV-5575, VENTED TO VAPOR RECOVERY SYSTEM, HEIGHT: 20 FT; DIAMETER: 5 FT A/N -499006 512089	D269		
<b>TANK, FEED SURGE, NO. 258, RPV-1073, NO. 4 DEBUTANIZER FEED, HEIGHT: 32 FT 6 IN; DIAMETER: 10 FT</b> A/N -499006 512089	<b>D270</b>		
<b>TANK, SURGE, RPV 1181, NO. 3 DEBUTANIZER FEED, HEIGHT: 32 FT; DIAMETER: 9 FT</b> A/N -499006 512089	<b>D272</b>		
DRUM, KNOCK OUT, WEST, RPV 1185, SOUTH AREA FLARE, LENGTH: 15 FT 8 IN; DIAMETER: 6 FT A/N -499006 512089	D274		
DRUM, KNOCK OUT, EAST, RPV 1189, SOUTH AREA FLARE, LENGTH: 15 FT 8 IN; DIAMETER: 6 FT A/N -499006 512089	D275		
ACCUMULATOR, RPV-1639, DEBUTANIZER OVERHEAD; LENGTH: 12 FT; DIAMETER: 6 FT A/N -499006 512089	D277	BENZENE: (10) [40CFR 61 Subpart FF_02, 12-4-2003]; VOC:500 PPMV (8) [40CFR 61 Subpart FF, 12-4-2003]	H23.12
TANK, SURGE, RPV 1182, #10 STABILIZER FEED, LENGTH: 32 FT; DIAMETER: 9 FT A/N -499006 512089	D278		
TANK, SURGE, RPV 1180, #11 STABILIZER FEED, LENGTH: 32 FT; DIAMETER: 9 FT A/N -499006 512089	D280		
ACCUMULATOR, RPV-1205, NO. 11 STABILIZER OVERHEAD; LENGTH: 16 FT; DIAMETER: 6 FT A/N -499006 512089	D281		
<b>ACCUMULATOR, RPV-1213, NO.3 DEBUTANIZER OVERHEAD; LENGTH: 16 FT; DIAMETER: 6 FT</b> A/N -499006 512089	<b>D282</b>		
POT, RPV 2092, LPG VAPORIZER CONDENSATE, HEIGHT: 4 FT; DIAMETER: 2 FT A/N -499006 512089	D283		
TOWER, DEBUTANIZER, (RPV-1638), HEIGHT: 76 FT 8 IN; DIAMETER: 7 FT A/N -499006 512089	D284		
KNOCK OUT POT, RW 5511, NO. 3 DEBUTANIZER OVERHEAD ACCUMULATOR, HEIGHT: 3 FT; DIAMETER: 1 FT 11 IN A/N -499006 512089	D2894	BENZENE: (10) [40CFR 61 Subpart FF_02, 12-4-2003]; VOC:500 PPMV (8) [40CFR 61 Subpart FF, 12-4-2003]	H23.12
KNOCK OUT POT, RW 5512, NO. 3 DEBUTANIZER FEED SURGE DRUM, HEIGHT: 3 FT; DIAMETER: 1 FT 11 IN A/N -499006 512089	D2895	BENZENE: (10) [40CFR 61 Subpart FF_02, 12-4-2003]; VOC:500 PPMV (8) [40CFR 61 Subpart FF, 12-4-2003]	H23.12
KNOCK OUT POT, RW 5513, NO. 1 DEBUTANIZER ACCUMULATOR, HEIGHT: 3 FT; DIAMETER: 1 FT 11 IN A/N -499006 512089	D2896	BENZENE: (10) [40CFR 61 Subpart FF_02, 12-4-2003]; VOC:500 PPMV (8) [40CFR 61 Subpart FF, 12-4-2003]	H23.12
KNOCK OUT POT, RW 5514, NO. 2 DEBUTANIZER ACCUMULATOR, HEIGHT: 3 FT; DIAMETER: 1 FT 11 IN A/N -499006 512089	D2897	BENZENE: (10) [40CFR 61 Subpart FF_02, 12-4-2003]; VOC:500 PPMV (8) [40CFR 61 Subpart FF, 12-4-2003]	H23.12

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KNOCK OUT POT, RW 6336, DIB FEED SURGE DRUM, HEIGHT: 2 FT; DIAMETER: 1 FT A/N -499006 512089	D2898		
KNOCK OUT POT, RPV 4342, HEIGHT: 3 FT 6 IN; DIAMETER: 1 FT A/N -499006 512089	D2628	BENZENE: (10) [40CFR 61 Subpart FF_02, 12-4-2003]; VOC:500 PPMV (8) [40CFR 61 Subpart FF, 12-4-2003]	H23.12
TOWER, DEHEXANIZER NO.1, RPV-5665, STRAIGHT RUN NAPHTHA, HEIGHT: 144 FT 11 IN; DIAMETER: 13 FT 3 IN A/N -499006 512089	D1364		
ACCUMULATOR, RPV-5666, NO.1 DEHEXANIZER OVERHEAD; LENGTH: 30 FT; DIAMETER: 9 FT A/N -499006 512089	D1365		
KNOCK OUT POT, RPV 5667, NO. 1 DEHEXANIZER REBOILER CONDENSATE, LENGTH: 3 FT; DIAMETER: 2 FT 6 IN A/N -499006 512089	D1366		
TOWER, DEHEXANIZER NO.2, RPV-5678, STRAIGHT RUN NAPHTHA, HEIGHT: 144 FT 11 IN; DIAMETER: 13 FT 3 IN A/N -499006 512089	D1367		
ACCUMULATOR, RPV-5679, NO.2 DEHEXANIZER OVERHEAD; LENGTH: 30 FT; DIAMETER: 9 FT A/N -499006 512089	D1368		
KNOCK OUT POT, RPV 5680, NO. 2 DEHEXANIZER REBOILER CONDENSATE, LENGTH: 3 FT; DIAMETER: 2 FT 6 IN A/N -499006 512089	D1369		
KNOCK OUT POT, RPV 5708, NO. 1 NAPHTHA SPLITTER REBOILER CONDENSATE, LENGTH: 3 FT; DIAMETER: 2 FT 5 IN A/N -499006 512089	D1372		
KNOCK OUT POT, RPV 5712, NO. 2 DEBUTANIZER REBOILER CONDENSATE, LENGTH: 1 FT 9 IN; DIAMETER: 1 FT 6 IN A/N -499006 512089	D1373		
TANK, FLASH, RPV 5713, NO. 1 DEHEXANIZER REBOILER, LENGTH: 16 FT 6 IN; DIAMETER: 6 FT A/N -499006 512089	D1374		
TANK, FLASH, RPV 5714, NO. 2 DEHEXANIZER REBOILER, LENGTH: 16 FT 6 IN; DIAMETER: 6 FT A/N -499006 512089	D1375		
TANK, FLASH, RPV 5715, DEHEXANIZER, LENGTH: 21 FT; DIAMETER: 6 FT A/N -499006 512089	D1376		
KNOCK OUT POT, RPV 5716, NO. 2 DEHEXANIZER REBOILER CONDENSATE, LENGTH: 3 FT; DIAMETER: 2 FT 6 IN A/N -499006 512089	D1377		
KNOCK OUT POT, RPV 5717, NO. 1 DEHEXANIZER REBOILER CONDENSATE, LENGTH: 3 FT; DIAMETER: 2 FT 6 IN A/N -499006 512089	D1378		
TANK, FLASH, RPV 5718, 150 LB STEAM, LENGTH: 13; DIAMETER: 5 FT A/N -499006 512089	D1379		
TANK, FLASH, RPV 5719, NAPHTHA SPLITTER REBOILER CONDENSATE, LENGTH: 3 FT; DIAMETER: 2 FT 6 IN A/N -499006 512089	D1380		

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TANK, FLASH, RPV 5733, 25 LB STEAM, LENGTH: 19 FT 6 IN; DIAMETER: 6 FT A/N -499006 512089	D1381		
VESSEL, SEPARATOR, RPV 5734, HC CONDENSATE, LENGTH: 6 FT; DIAMETER: 6 FT A/N -499006 512089	D1382		
VESSEL, SEPARATOR, RW-6191, COALESCING OIL, HEIGHT: 5 FT; DIAMETER: 5 FT 3 IN A/N -499006 512089	D2899		
VESSEL, SEPARATOR, RW-6192, BULK OIL, HEIGHT: 10 FT; DIAMETER: 6 FT A/N -499006 512089	D2900		
KNOCK OUT POT, RPV 5735, COKER GAS FRACTIONATION DEHEXANIZER REBOILER CONDENSATE, LENGTH: 2 FT; DIAMETER: 1 FT 6 IN A/N -499006 512089	D1383		
KNOCK OUT POT, RPV 5736, COKER GAS FRACTIONATION SWING REBOILER CONDENSATE, LENGTH: 2 FT; DIAMETER: 1 FT 6 IN A/N -499006 512089	D1384		
KNOCK OUT POT, RPV 5780, DEHEXANIZER FLARE, LENGTH: 10 FT; DIAMETER: 5 FT A/N -499006 512089	D1385	BENZENE: (10) [40CFR 61 Subpart FF_02, 12-4-2003]; VOC:500 PPMV (8) [40CFR 61 Subpart FF, 12-4-2003]	H23.12
SCRUBBER, RPV 1293, SFIA FUEL GAS, HEIGHT: 30 FT; DIAMETER: 3 FT 4 A/N -499006 512089	D287		
VESSEL, EAST VAPOR RECOVERY BLOWCASE, RW-713, HEIGHT: 4 FT 4 IN; DIAMETER: 2 FT A/N -499006 512089	D2901		
FUGITIVE EMISSIONS, MISCELLANEOUS A/N -499006 512089	D2476	HAP: (10) [40CFR 63 Subpart CC, #5A, 6-23-2003]	H23.3

**Process 21: AIR POLLUTION CONTROL SYTEM****SYSTEM : SOUTH AREA FLARE SYSTEM**

S56.1,  
S58.2,  
S31.10

Equipment	ID No.	Connected to	Emissions and Requirements	Conditions
FLARE, ELEVATED WITH STEAM INJECTION, NATURAL GAS, WITH 3 PILOT ASSEMBLIES, TIE-IN LINE TO FCCU FLARE FROM THE SOUTH UNITS, DIA: 3 FT, HEIGHT: 203 FT 6 IN A/N:499007 512088 BURNER, JOHN ZINK, MODEL STF-S-24	C1302	809 815	CO: 2000 PPMV (5) [RULE 407, 04/02/82]; PM: 0.10 GRAINS/SCF (5) [RULE 409, 08/07/81]	D12.15, D323.1, E193.3, H23.12, H23.29, II.1
KNOCK OUT POT, RPV-0417, DIA: 5 FT, HEIGHT: 7 FT A/N:499007 512088	D2795			
KNOCK OUT POT, FLARE STACK, DIA: 108 IN, HEIGHT: 258 IN A/N:499007 512088	D1303			
KNOCK OUT POT, RPV-303, SOUTH AREA FLARE PRIMARY, DIA: 10 FT, LENGTH: 40 FT A/N:499007 512088	D1304			
DRUM, WATER SEAL, RW 6989, LENGTH: 25 FT, DIAMETER: 13 FT A/N:499007 512088	D2796			

<p align="center"><b>SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT</b></p> <p align="center"><i>COMPLIANCE and ENGINEERING</i></p> <p align="center"><b>APPLICATION EVALUATION AND CALCULATIONS</b></p>	<p>Page 5 of 20 pages  Appl. No.: see below  Processed by: Hanh Le  Checked by:  Date: 9/8/2010</p>
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KNOCK OUT POT, SOUTH FLARE LINE, RPV-1994, DIA: 1 FT 4 IN, HEIGHT: 5 FT 9 IN A/N: <del>499007</del> 512088	D2809			
KNOCK OUT POT, NORTH FLARE LINE, RPV-1993, DIA: 1 FT 4 IN, HEIGHT: 5 FT 9 IN A/N: <del>499007</del> 512088	D2810			
AUTOPUMP, SOUTH AREA FLARE, RW 6876-289.09, DIA: 1 FT, HEIGHT: 3 FT 11 IN A/N: <del>499007</del> 512088	D2863			
AUTOPUMP, SOUTH AREA FLARE, RW 6877-289.09, DIA: 1 FT, HEIGHT: 3 FT 11 IN A/N: <del>499007</del> 512088	D2864			
FUGITIVE EMISSIONS, MISCELLANEOUS A/N: <del>499007</del> 512088	D2542		<b>HAP:</b> (10) [RULE 63SUBPART CC; #5A, 6-23-2003]	H23.3

## BACKGROUND

Application no. 512089 was submitted for the modification of Superfractionation Unit. This modification is to connect the pressure relief valves (PRVs) of nos. 3 and 4 debutanizer feed surge drums, D272, D270, and no. 3 debutanizer overhead accumulator, D282, to the South Area flare. These tie-ins will eliminate the risk of releasing process vapors to the atmosphere from the overpressure caused by system liquid overflow problem.

Application no. 512088 was submitted for the modification of the South Area flare to connect additional tie-ins of the above PRVs to the system flare header.

## Permit history

The permit histories for the above process unit and the flare are shown in the following table:

**Table 1**

A/N	Previous Permits	Date	Permitting History
<b>Superfractionation Unit - Process 4, System 1</b>			
512089	499006 PC	3/26/10	Conversion of three accumulators to two ko drums and connect PSVs of these drums to flare system
	478483 PC	9/30/08	Replacement of PRV
	459256 PC	7/13/08	Replacement of PRV
	438618		Admin change - changes on equipment description
	395833		Change of ownership from Arco to BP
	376184 PC	7/11/01	CARB RFG Phase III
	309522		Modification
	274014 PC	10/27/93	CARB RFG Phase I

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119221/ M47818	1/28/86	Modification
A39783/ P25744	5/10/68	Superfractionation Permit

<b>South Area Flare - Process 21, System 1</b>			
512088	499007 PC	3/26/10	PRVs tie-ins from knock out drums
	484937 PC	9/30/08	Adding autopumps and PRVs tie-ins from various sources
	478484 PC	8/30/08	Adding PRV from feed surge drum in Superfractionation unit
	462149 PC	3/23/07	Adding PRV from C4 Alkylation and Iso. Octene Unit
	454566 PC	3/23/07	To connect to the flare gas recovery system
	449757 PC	1/30/07	Adding PRVs from Mixed Light Ends Loading/Unloading Rack
	434527 PC	7/1/05	Adding vents (Tk-710 project)
	427415		TV clean up
	395370/ F50715	3/27/02	Change of ownership from ARCO to BP
	C17619/ M43343	4/01/85	Adding vents
	A87575/ P68340	10/27/76	Adding vents
	4148 / 7087		Initial construction permit

## COMPLIANCE RECORD REVIEW

A check of the AQMD compliance database for the compliance activity of this facility from 08/01/07 until the present determined that there were no specific violations reported for the Superfractionation Unit and the South Area flare.

## PROCESS DESCRIPTION

### Superfractionation Unit:

The Superfractionation unit fractionates a full range of thermocracked naphtha from the No. 1 and 2 Coker Units into heavy naphtha (dehexanizer bottoms), gasoline (debutanizer bottoms) and a butane and lighter stream (debutanizer overhead).

The dehexanizer removes benzene precursors, mainly alkanes, before feeding naphtha streams to the naphtha splitter. Straight run naphtha streams are either transferred directly from the crude unit as overheads or are conveyed from dehexanizer storage tanks to the dehexanizer tower. The dehexanizer overhead streams (mainly C6's and lighter) are routed through a condenser and a reflux system to increase the efficiency of the desired products. The C6's and lighter products leave the reflux accumulator drum to the debutanizer tower where C4's and lighter products are removed. The naphtha streams free of benzene precursors (mainly C7+) leave the bottom of the tower to enter the Naphtha Splitter or reformer feed storage tanks.

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In the previous modifications, BP connected the feed surge drum's PRV to the coker flare and this has caused liquid overflow in the system. To solve this problem, in the next modification, BP added two knockout drums prior to the flare to remove any liquid discharge. In this modification, BP proposes to connect nos. 3 and 4 debutanizer feed surge drums' PRV and no. 3 debutanizer overhead accumulator to the coker flare in order to minimize the release of process gas to the atmosphere in case of liquid overflow occurrence.

**South Area Flare (Coker)**

This South Area flare is considered an air pollution control device to accommodate releases of emergency vent and process upset gases. This unit currently serves multiple units in the south area of the refinery. The flare was designed for a relief load of 601,000 lb/hr (MW at 63 lb/lbmol) and is subject to emergency releases during common failure scenarios. This flare will be modified to tie-in three PRVs from three vessels in the Superfractionation unit.

The South Area Flare System is under variance coverage (Case No. 5357-36), from the requirements of flare gas monitoring, under Rule 1118. Rule 1118 requirements include continuous or semi-continuous monitoring of flare gas for total sulfur content, higher heating value, and flow rate. Condition II.1 of the Title V permit addresses compliance with the requirements of this variance.

This Coker flare was chosen for the above tie-ins because of the proximity to connected equipment and the ability to coordinate shutdown of the flare with equipment vented to the flare. Most importantly, this flare at design capacity of 601,000 lb/hr (MW 63 lb/lbmol) will adequately handle the worst possible discharge rate of 32,380 lb/hr from the fire circle that includes no. 4 debut feed surge drum, D270, or 56,750 lb/hr from the total fire circle of no. 3 debut feed surge drum, D272, or 47,573 lb/hr from the total fire circle of debut overhead accumulator, D282. The attached flare analysis showed that these potential relieves are not part of the common failure scenario (e.g. power, cooling tower, steam failure or fire); therefore, the loads from the additional new PSVs will not additive to the other fire circles nor any other flaring event associated with the Coker flare. As a result, there will be no impact on the capacity of the flare.

Other design criteria are also satisfied general requirements for a flare:

Design Criteria	D270's PRV	D272's PRV	D282's PRV
Flare tip gas velocity (Mach #: estimate vs. max allowed)	0.011 vs. 0.22	0.02 vs. 0.22	0.016 vs. 0.22
Back pressure (psig)	18.4	31.5	23.4
Thermal radiation (btu/ft2hr: estimate vs. max allowed)	272 vs. 1500	150 vs. 1500	369 vs. 1500

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Notes for D270's:

- \* Flare tip gas velocity – the flare tip velocity for a release from proposed PRV is at Mach 0.011 which is well below the manufacturer's recommended maximum of Mach 0.22.
- \* Back pressure - the calculated back pressure of 18.4 psig at this new PRV during a capacity release will not affect the capacity of any other relief valve in the Coker flare system.
- \* Thermal radiation - the maximum thermal radiation resulting from this PRV release is 272 btu/hr ft<sup>2</sup> at 150 ft from the flare. This radiation level is well below the API recommended maximum radiation level of 1500 Btu/ft<sup>2</sup> hr, for areas where emergency action lasting 2 to 3 minutes. They might allow personnel entering without shielding but with appropriate clothing.

The flare KO drum and pump are adequate to handle the additional vapor and liquid flows - the expected release for all the vapor relief valves listed above is much less than the flare capacity, the flare KO drum is adequate to handle the releases.

**EMISSIONS CALCULATION:**

Fugitive emissions are the main air contaminants concerned in the proposed modification of the above process unit. The proposed modification will cause a small net increase in VOC emissions from the additional components to the process unit as detailed in Table 2 below.

**Table 2 - Fugitive Emissions of Superfractionation Unit**

Sources	Nos. of Existing Sources*	# Compts Removed	# Compts Added	Final Compts Count	Emission Factor (lb/yr)	Net Change in VOC's	After Modif Emission (lb/yr)
Valves							
Sealed bellows-Gas/V & L Liquid	759		18	777	0		
Live loaded w/dual seal syst: Nat gas	1			1	12		12
Gas Vapor	331	1		330	23	-23	440
Light Liquid	2531			2531	19		48089
Heavy Liquid					3		
Pumps					0		
Sealess type - LL							
Double or Tandem Mech. Seal – LL	50			50	104		5200
Single Mech. Seal (HL)					80		
Fittings (flanges, connts and others)	18140	1	27	18166	1.5	39	27249
Process Drains - P-Trap or Seal Pot	262			262	80		20960
PRVs	50	3	3	50	0		
Total ROG emissions	101,934 /yr 283.15 lb/30-dy ave					16 lb/yr or 0.04 lb/day	101,950/yr or 283.19 lb/30-day Ave.

\* Baseline emissions based on previous A/N 499006.



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**Table 3 - Flare Emissions**

There will be no changes in the flare emissions. The baseline emissions listed in previous A/N 484937 will be used in this application as shown in the table below.

<b>Emission</b>	<b>CO (lb/yr) (lb/dy)</b>	<b>ROG (lb/yr) (lb/dy)</b>	<b>NOx (lb/yr) (lb/dy)</b>	<b>PM (lb/yr) (lb/dy)</b>	<b>SOx (lb/yr) (lb/dy)</b>
◦ Combustion	5555 15.36	946 2.60	1021 2.89	339 0.96	6055 16.56
◦ Fugitive		19.10			
Total	<b>15.36</b>	<b>21.70</b>	<b>2.89</b>	<b>0.96</b>	<b>16.56</b>

## **RULE REVIEW**

### **Part 1 District Rules**

#### **Rule 212 - Standards for Approving Permits**

The proposed modification to the Superfractionation Unit meets all criteria in Rule 212 for permit approval. The modification is designed so that the unit can emit a lower emission level during emergency situations.

The replacement of atmospheric PRV with enclosed PRV does not constitute a significant project because 1) the modified permit unit is not located within 1000 feet of a school; 2) the estimated emission increase will not exceed paragraph (g)'s threshold; 3) the modified permit unit does not have an increase cancer risk greater than, or equal to, one in a million ( $1 \times 10^{-6}$ ) during a lifetime of 70 years or pose a risk of nuisance.

#### **Rule 401 & 402 - Visible Emissions & Nuisance**

Visible emission violations and public nuisance complaints associated with the above project are not expected under normal operating conditions.

#### **Rule 467 - Pressure Relief Devices**

The new pressure relief valves (PRV) on the feed surge drum and overhead accumulator are the emergency pressure relief valves. PRVs to relief overpressure condition are exempt from this rule as specified by paragraph (g)(3). Therefore, this rule is not applicable to the proposed PRV. However, these new PRV will be subject to the applicable inspection, maintenance and recordkeeping requirements specified by Rule 1173.

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**Rule 466.1 - Valves and Flanges**

The new valves and flanges will be equipped BACT and subject to the applicable inspection, maintenance and recordkeeping requirements specified by Rule 1173. The permit unit is expected to comply with this rule.

**Rule 1118 - Control of Emissions from Refinery Flares**

*1118(c)(1)(A)* requires a pilot flame to be present at all times - Condition D12.15 currently listed on the facility permit requires the installation of a thermocouple to indicate the presence of a pilot flame.

*1118(c)(1)(B)* requires the flare to be operated in a smokeless manner - Condition D323.1 listed on the facility permit requires specific remedial actions to be taken in the next event that visible emissions are observed from the flare.

*1118(c)(1)(C)* requires an annual leak survey of all pressure relief devices connected to the refinery flare - The facility is expected to comply with this requirement. Compliance will be determined by the quarterly report that the facility is required to issue according to 1118(i)(5).

*1118(g)* defines the monitoring and recording requirements - BP has submitted a Flare Monitoring and Recording Plan that is consistent with the Rule requirements prior to the Rule amendment on 11/4/05.

**Rule 1123 - Refinery Process Turnarounds**

The refinery is subject to the requirements of this rule during a process turnaround. BP refinery is required to submit a compliance plan to the AQMD for review and approval if the refinery uses inert gases or vacuum education in the process turnaround. Since the process will not undergo turnaround at this time, this rule is not applicable to the process unit. The permit unit is expected to comply with this rule in future process turnarounds.

**Rule 1173 - Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants**

The process is equipped with valves, flanges, pumps, pressure relief devices (PRDs), drains, diaphragms, hatches, sigh-glasses and meters in VOC service. Therefore, these components are subject to the following applicable requirements:

*Leak standards:* the new components will be equipped with BACT; hence, they are expected to comply with the requirements specified in this paragraph.

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Identification: all new major components (>4 in valves and PRDs and >5 HP pumps) will be identified in Piping and Instrumentation (P&ID) flow diagrams.

Inspection: BP will continue to inspect the components in accordance to the applicable requirements specified by this paragraph.

Maintenance: BP will continue to repair or replace components in accordance to the time table specified by Table 2 of this paragraph.

Atmospheric PRDs: all atmospheric PRDs in the process unit are listed in the compliance plan (A/N 499358) approved on August 13, 2009. Compliance with the monitoring requirements is expected.

Recordkeeping and reporting: BP will continue keeping records and report of all leaks, repairs and re-inspections in accordance to the applicable requirements specified by this paragraph.

BP is expected to comply with all applicable requirements of this rule.

#### **Reg. XIII - New Source Review:**

This regulation applies to any new, modified or relocated source which results in an emission increase of any non-attainment air contaminant, any ozone depleting compound, or ammonia.

#### **Rule 1303(a)(1) – BACT and 1303(b) - Offset:**

The proposed replacement of atmospheric pressure relief valves with the pressure relief valves vented to the control system will result in an uncontrolled VOC emission increase of  $\geq 1.0$  lb, BACT is applicable. However, with 18 bellow sealed valves (BACT) to be installed, the total emission increase will be 0.04 lb/day. Modeling and emission offset are not required.

#### **Reg. XIV - New Source Review of Carcinogenic Air Contaminants**

This rule requires a permit applicant to assess the cancer risk due to the cumulative emission impacts of new/modified sources in the facility.

The proposed modification will result in an emission increase of 0.04 lb/day of VOC. The cancer risk and hazard index thresholds are not expected to be exceeded at any receptor location. No health risk analyses are required.

#### **Reg. XVII - Prevention of Significant Deterioration (PSD)**

This regulation applies to pollutants which have attained the ambient air standards in South Coast Air Basin. These include NO<sub>2</sub>, SO<sub>2</sub> and lead. This project does not result in an increase in emissions of these pollutants and therefore it is not subject to the requirements of this regulation.

#### **Reg. XX – Regional Clean Air Incentives Market (RECLAIM)**

BP Carson refinery is a cycle II RECLAIM facility. There are no emissions of NO<sub>x</sub> and SO<sub>x</sub> associated with PRVs replacement. Furthermore, the flare

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is exempt from the monitoring, reporting, and recordkeeping requirements of this rule. Therefore, this regulation is not applicable to the proposed modification. The facility is expected to continue complying with the requirements of this regulation.

#### **Reg. XXX - Title V Operating Permits**

Rule 3002 requires that no person shall construct, modify, or operate equipment located at a Title V facility without first obtaining a Title V permit or permit revision that allows the construction, or modification. This facility is subject to and complies with Title V requirements. On September 1, 2009, BP's initial Title V permit became effective, and has been issued revisions.

This project is considered to be a "De Minimis Significant Revision" which means any Title V revision where the cumulative emission increase of non-RECLAIM pollutants or hazardous pollutants from this permit revision during the term of the permit is not greater than any of the emission threshold levels listed in this rule section. The proposed Title V permit revision will be submitted to EPA for a 45-day review.

#### **Part 2 State Regulations**

##### **California Environmental Quality Act (CEQA)**

This proposed modification is not a significant project. Therefore, preparation of a CEQA document is not required.

#### **Part 3 Federal Regulations**

##### **40 CFR Part 60 Subpart A General Provisions**

§60.18(c)(1) requires flares to be operated with no visible emissions. Condition D401.1 currently requires specific remedial actions to be taken in the event that visible emissions are observed from the flare. Compliance with this section is expected.

§60.18(f)(2) requires the presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame. Condition D12.15 currently on the permit requires the installation of a thermocouple to indicate the presence of a pilot flame. The facility is therefore in compliance with this section.

##### **40 CFR Part 60 Subpart J Standards of Performance for Petroleum Refineries**

§60.104(a)(1) limits the H<sub>2</sub>S concentration of fuel gas burned in combustion devices

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to be no more than 160 ppmv. The process upset gases that are combusted in a flare are exempt.

Refinery flares in the South Coast Air Basin are only allowed to operate during periods of process upsets or emergency malfunctions, the conditions that are exempt from the 0.1 gr/dscf of H<sub>2</sub>S limit specified by this subpart.

#### **40 CFR60 Subpart GGG - Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries.**

The process unit is subject to the applicable requirements of this subpart.

**§60.592(a)** requires new devices to comply with section §60.482-1 through §60.482-10.

**§60.482-2** defines the inspection and maintenance requirements for pumps in light liquid service. The pumps will also be sealless or tandem sealed that comply to BACT of < 500 ppmv ROG emissions. This section is not applicable since there will be no pumps to be installed for this project.

**§60.482-3** requires compressors to be equipped with a seal system that includes a barrier fluid. This section is not applicable since there is no compressor to be installed in this project.

**§60.482-4** defines the requirements for pressure relief devices in gas/vapor service. This section exempts the PRVs being connected to the control equipment. Since the proposed PRD will be connected to the control equipment, it is exempt from this section requirement.

**§60.482-5** defines the requirements for sampling connection systems. This section is not applicable to this project as there will be no sampling systems to be installed.

**§60.482-6** requires each open ended valve or line to be equipped with: a cap, blind flange, plug, or a second valve that will be sealed at all times. These standards do not apply as the project will not involve with open ended valve or line.

**§60.482-7** defines the inspection and maintenance requirements for valves in light liquid service. The valves to be installed will be included in the facility inspection and maintenance program. Compliance with this section is expected.

**§60.482-8** defines the requirements for pumps and valves in heavy liquid service. The new components in heavy liquid service will be equipped with BACT complying to a ROG emission limit of < 500 ppmv, and will be included in the facility inspection and maintenance program. The components are expected to comply with these standards.

**§60.482-9** provides allowances for delaying the repair of leaking components. Any repairs of leaked components will be subject to the time limits specified by AQMD Rule 1173 – Table 2 or in this section, whichever is more stringent. The components are expected to comply with the requirements.

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**§60.482-10** requires flares (control device) to comply with the requirements of §60.18. This section is not applicable since the proposed project does not involve with the flare operation.

BP refinery is expected to continue demonstrating the compliance with all applicable requirements of this subpart.

#### **40 CFR Part 63 Subpart CC – National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries**

**§63.640(c)(4)** indicates that this subpart applies to equipment leaks from petroleum product refining units. This process unit is, therefore, subject to the equipment leak standards for existing sources as specified in §63.648.

**§63.648** requires devices subject to this subpart to comply with the equipment leak requirements of 40 CFR60 Subpart VV.

The ability to comply with the requirements of 40 CFR60 Subpart VV is described in the evaluation of 40 CFR60 Subpart GGG in the evaluation. In general, the equipment leak inspection and monitoring requirements of Rule 1173 are more stringent, but pertinent requirements of this regulation have been incorporated into BP's Inspection and Monitoring Program for fugitive emissions.

BP is expected to be in compliance with requirements of this regulation.

#### **CONCLUSION/ RECOMMENDATION:**

The above equipment will operate in compliance with all applicable rules and regulations of the District. Permits to Construct are recommended to be issued to BP Carson Refinery subject to the following conditions:

##### **Conditions:**

Superfractionation Unit: S4.3, S4.4, S13.2, **S56.1**, H23.3, H23.12.

South Area Flare: S31.10, S56.1, S58.2, D12.15, D323.1, E193.3, H23.3, H23.12, H23.29, 11.1

**S4.3** THE FOLLOWING CONDITION(S) SHALL APPLY TO ALL AFFECTED DEVICES LISTED UNDER SECTION H OF THIS SYSTEM FOR FUGITIVE EMISSIONS OF VOLATILE ORGANIC COMPOUNDS (VOC):

- \_All open-ended valves shall be equipped with cap, blind flange, plug, or a second valve.
- \_All pressure relief valves shall be connected to closed vent system or equipped with rupture disc.
- \_All sampling connections shall be closed-purge, closed-loop, or closed-vent system.
- \_All process drains shall be equipped with water seal, or a closed vent system and control device complying with the requirements of 40CFR60 Subpart QQQ section 60.692-5.

**[RULE 1173, 5-13-1994; RULE 1173, 2-6-2009; 40CFR 60 Subpart QQQ, 10-17-2000]**

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**S4.4 THE FOLLOWING CONDITION(S) SHALL APPLY TO ALL AFFECTED DEVICES LISTED UNDER SECTION H OF THIS SYSTEM FOR FUGITIVE EMISSIONS OF VOLATILE ORGANIC COMPOUNDS (VOC):**

- \_All components are subject to District Rule 1173 and 40CFR60, Subpart GGG.
  - \_All new components in VOC service as defined in Rule 1173, except valves and flanges shall be inspected quarterly using EPA reference method 21. All new valves and flanges in VOC service except those specifically exempted by Rule 1173 shall be inspected monthly using EPA Method 21.
  - \_All new valves in VOC service shall be of leakless type, except those specifically exempted by Rule 1173 or approved by the District in writing in the following applications: heavy liquid service, control valves, instrument piping/tubing, applications requiring torsional valve stem motion, applications where failures could pose safety hazards (e.g. drain valves with valve stems in horizontal position), retrofits with space limitations, and valves not commercially available.
  - \_For the purpose of this condition, leakless valve shall be defined as any valve equipped with sealed bellow or equivalent as approved in writing by the District prior to installation.
  - \_If 98.0 percent or greater of the new valve and the new flange population inspected is found to leak gaseous or liquid volatile organic compounds at a rate less than 500 ppm for two consecutive months, then the operator may revert to a quarterly inspection program with the approval of the executive officer. This condition shall not apply to leakless valves.
  - \_All new components in VOC service, a leak greater than 500 ppm but less than 1,000 ppm measured as methane above background as measured using EPA Method 21, shall be repaired within 14 days of detection. Components shall be defined as any valve, fitting, pump, compressor, pressure relief device, diaphragm, hatch, sight-glass, and meter, which are not exempted by Rule 1173.
  - \_The operator shall keep records of the monthly inspection (and quarterly where applicable), subsequent repair, and reinspection, in a manner approved by the District.
  - \_The operator shall provide to the District, no later than 90 days after initial startup, a recalculation of the fugitive emissions based on actual components installed and removed from service. The operator shall also submit a complete, as built, piping and instrumentation diagram(s) and copies of requisition data sheet for all non-leakless type valves with a listing of tag numbers and reasons why leakless valves were not used.
- [RULE 1173, 5-13-1994; RULE 1173, 2-6-2009; RULE 1303(A)(1)-BACT, 5-10-1996; 40CFR 60 Subpart GGG, 6-2-2008]**

**S13.2** All devices under this system are subject to the applicable requirements of the following rules and regulations:

CONTAMINANT   RULE	RULE/SUBPART
VOC   DISTRICT RULE   1123 <b>[RULE 1123, 12-7-1990]</b>	

**S31.10** THE FOLLOWING BACT REQUIREMENTS SHALL APPLY TO VOC SERVICE FUGITIVE COMPONENTS ASSOCIATED WITH THE DEVICES THAT ARE COVERED BY APPLICATION NUMBER(S) 454566, 454567, 454568, 458598, 458600, 458610, 459257, 459284, 459286:

- \_The operator shall provide to the District, no later than 90 days after initial startup, a recalculation of the fugitive emissions based on actual components installed and removed from service. The valves and flanges shall be categorized by size and service. The operator shall submit a listing of all new non-bellows seal valves which shall be categorized by tag no., size, type, operating temperature, operating pressure, body material, application, and reasons why bellows seal valves were not used

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\_All new valves in VOC service, except those specifically exempted by Rule 1173 and those in heavy liquid service as defined in Rule 1173, shall be bellows seal valves, except as approved by the District, in the following applications: heavy liquid service, control valve, instrument piping/tubing, applications requiring torsional valve stem motion, applications where valve failure could pose safety hazard (e.g., drain valves with valve stems in horizontal position), retrofits/special applications with space limitations, and valves not commercially available

\_All new valves and major components in VOC service as defined by Rule 1173, except those specifically exempted by Rule 1173 and those in heavy liquid service as defined in Rule 1173, shall be distinctly identified from other components through their tag numbers (e.g., numbers ending in the letter "N"), and shall be noted in the records

\_All new components in VOC service as defined in Rule 1173, except valves and flanges, shall be inspected quarterly using EPA reference Method 21. All new valves and flanges in VOC service, except those specifically exempted by Rule 1173, shall be inspected monthly using EPA Method 21

\_If 98.0 percent or greater of the new (non-bellows seal) valves and the new flange population inspected is found to leak gaseous or liquid volatile organic compounds at a rate less than 500 ppmv for two consecutive months, then the operator may change to a quarterly inspection program with the approval of the District

\_The operator shall revert from quarterly to monthly inspection program if less than 98.0 percent of the new (non-bellows seal) valves and the new flange population inspected is found to leak gaseous or liquid volatile organic compounds at a rate less than 500 ppmv

\_All new components in VOC service with a leak greater than 500 ppmv but less than 1,000 ppmv, as methane, measured above background using EPA Method 21 shall be repaired within 14 days of detection. Components shall be defined as any valve, fitting, pump, compressor, pressure relief valve, diaphragm, hatch, sight-glass, and meter, which are not exempted by Rule 1173

\_The operator shall keep records of the monthly inspection (quarterly where applicable), subsequent repair, and re-inspection, in a manner approved by the District. Records shall be kept and maintained for at least five years, and shall be made available to the Executive Officer or his authorized representative upon request

\_All open-ended valves shall be equipped with cap, blind flange, plug, or a second valve

\_All pressure relief valves shall be connected to a closed vent system or equipped with a rupture disc and telltale indicator

\_All pumps shall utilize double seals and be connected to a closed vent system

\_All compressors to have a seal system with a higher pressure barrier fluid.

**[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(b)(2)-OFFSET, 5-10-1996]**

**S56.1** VENT GASES FROM ALL AFFECTED DEVICES OF THIS PROCESS/SYSTEM SHALL BE DIRECTED TO A GAS RECOVERY SYSTEM, EXCEPT FOR VENTING FROM THOSE EQUIPMENT SPECIFICALLY INDICATED IN A PERMIT CONDITION, AND FOR THE FOLLOWING VENT GASES WHICH MAY BE DIRECTED TO A FLARE:

1) VENT GASES DURING AN EMERGENCY AS DEFINED IN RULE 1118(B)(2) ;

2) VENT GASES DURING STARTUPS OR SHUTDOWNS AS DEFINED IN RULE 1118(B)(21) AND (B)(19), RESPECTIVELY, PROVIDED THAT ALL FLARES HAVE BEEN OPERATED IN ACCORDANCE WITH FLARING MINIMIZATION PROCEDURES AS DESCRIBED IN RULE 1118(C)(4); AND

3) VENT GAS DUE TO ESSENTIAL OPERATING NEED, AS DEFINED IN RULE 1118(B)(4)(A) THAT WOULD RESULT IN A TEMPORARY FUEL GAS SYSTEM IMBALANCE, OR AS DEFINED IN RULE 1118(B)(4)(C) THAT WOULD RESULT IN STREAMS THAT CANNOT BE RECOVERED DUE TO INCOMPATIBILITY WITH RECOVERY SYSTEM EQUIPMENT OR WITH REFINERY FUEL GAS SYSTEMS, PROVIDED THAT ALL FLARES HAVE BEEN OPERATED IN ACCORDANCE WITH FLARING MINIMIZATION PROCEDURES AS DESCRIBED IN RULE 1118(C)(4).

THE FLARING MINIMIZATION PROCEDURES AND ANY SUBSEQUENT CHANGES SHALL BE SUBMITTED TO THE DISTRICT AS DESCRIBED IN RULE 1118(C)(3).



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THIS PROCESS/SYSTEM SHALL NOT BE OPERATED UNLESS ITS DESIGNATED FLARE(S) AND THE GAS RECOVERY SYSTEM ARE BOTH IN FULL USE AND HAVE VALID PERMITS TO RECEIVE VENT GASES FROM THIS SYSTEM.

Vent gases shall not be released to the atmosphere except from the existing safety devices or relief valves on the following equipment:

Process 1, System 2: 10, 12, 14  
Process 1, System 3: 19, 20, 24 to 26  
Process 1, System 5: 35, 39, 41, 42, 2726  
Process 1, System 6: 43, 49, 57, 58  
Process 1, System 7: 59, 60, 61, 62  
Process 2, System 1: 74, 77, 2388  
Process 2, System 2: 82, 89, 90, 92, 2389  
Process 2, System 3: 94, 95  
Process 2, System 5: 98, 101, 102  
Process 2, System 6: 111, 112, 113  
Process 2, System 11: 159, 160  
Process 3, System 1: 164 to 167, 170, 172 to 181, 184, 1336 to 1349, 2382, 2387  
Process 3, System 2: 186, 188, 189, 191, 196, 199, 201, 204, 1352 to 1355  
Process 3, System 4: 241  
Process 3, System 6: 242, 245 to 247, 249  
Process 3, System 7: 1363  
Process 4, System 1: 253 to 256, 262, 265, 268, ~~270, 272~~, 277, 278, ~~282~~, 283, 287, 1364, 1366, 1367, 1372, 1374 to 1376, 1378 to 1381  
Process 4, System 2: 291, 1400 to 1403  
Process 4, System 3: 292, 293, 297, 299  
Process 4, System 4: 302, 304  
Process 4, System 5: 308, 310, 311  
Process 4, System 7: 1975 to 1977, 1980, 1981, 1986  
Process 5, System 1: 314 to 317, 319, 320, 323 to 332  
Process 5, System 2: 335 to 338, 340, 343, 348 to 353  
Process 5, System 3: 356, 360, 1413  
Process 5, System 4: 401, 406, 407, 412, 414  
Process 6, System 1: 426, 427, 429, 431, 434 to 437, 440, 444, 445, 451, 454 to 456, 458, 460  
Process 6, System 2: 462, 469, 474 to 481, 483, 486  
Process 6, System 3: 490, 494, 495, 498, 501, 503, 506, 507, 509, 510, 512, 513, 518, 520, 521, 525 to 528  
Process 7, System 1: 542 to 548, 550, 552 to 558, 560, 562 to 569  
Process 7, System 2: 2892, 2893  
Process 8, System 1: 583, 584, 593 to 597  
Process 8, System 2: 608, 610, 612 to 614, 622, 624  
Process 9, System 1: 631, 632, 638 to 652, 659 to 663, 666 to 668, 1482, 1483, 1486 to 1488, 1491, 1493 to 1495, 1497 to 1502, 1528, 1533 to 1536, 2019  
Process 9, System 2: 672 to 681, 685  
Process 9, System 9: 637, 653, 656, 658, 664  
Process 10, System 1: 706  
Process 10, System 2: 709, 711 to 715, 720, 721  
Process 10, System 3: 725  
Process 11, System 1: 730  
Process 12, System 1: 756, 759  
Process 12, System 2: 760 to 762, 764  
Process 12, System 3: 765 to 770  
Process 12, System 4: 771, 772, 774  
Process 12, System 8: 785, 790, 2365, 2366  
Process 12, System 9: 794, 797 to 799  
Process 12, System 10: 806  
Process 12, System 12: 815, 818  
Process 12, System 13: 823, 826, 828  
Process 12, System 22: 853, 854  
Process 12, System 24: 860, 861, 863, 864, 865

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Process 12, System 25: 866, 867, 869, 870, 871, 2003  
Process 12, System 27: 873 to 875  
Process 15, System 7: 1644 to 1646, 1648, 1649  
Process 16, System 3: 2115 to 2120, 2353, 2394  
Process 24, System 1: 1304  
Process 24, System 2: 1307  
Process 24, System 4: 1315, 1316, 1319, 1323 to 1325, 1659

**[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(b)(2) – Offset, 5-10-1996]**

**S58.2** SOUTH AREA FLARE SYSTEM SHALL ONLY BE USED TO RECEIVE AND HANDLE VENT GASES FROM THE FOLLOWING PROCESS(ES) AND SYSTEM(S):

- 1) COKING UNITS (PROCESS: 2, SYSTEM: 1 & 2)
- 2) COKER BLOWDOWN FACILITY (PROCESS: 2, SYSTEM: 3)
- 3) COKER GAS COMPRESSION & ABSORPTION UNIT (PROCESS: 2, SYSTEM: 5)
- 4) BLOWDOWN GAS COMPRESSION SYSTEM (PROCESS: 2, SYSTEM: 6)
- 5) COKER GAS TREATING/H<sub>2</sub>S ABSORPTION UNIT (PROCESS: 2, SYSTEM: 11)
- 6) FLUID CATALYTIC CRACKING UNITS (PROCESS: 3, SYSTEM: 1, 2 & 3)
- 7) PROPYLENE TETRAMER UNIT (PROCESS: 3, SYSTEM: 6)
- 8) SUPERFRACTIONATION UNIT (PROCESS: 4, SYSTEM 1)
- 9) NAPHTHA SPLITTER UNIT (PROCESS: 4, SYSTEM: 2)
- 10) LIGHT ENDS DEPROPANIZER UNIT (PROCESS: 4, SYSTEM: 3)
- 11) STRAIGHT RUN LIGHT ENDS DEPROPANIZER UNIT (PROCESS: 4, SYSTEM: 4)
- 12) NORTH AREA DEISOBUTANIZER UNIT (PROCESS: 4, SYSTEM: 5)
- 13) COKER GASOLINE FRACTIONATION UNIT (PROCESS: 4, SYSTEM: 7)
- 14) LIQUID RECOVERY UNIT (PROCESS: 4, SYSTEM: 8)
- 15) LIGHT GASOLINE HYDROGENATION UNIT (PROCESS: 5, SYSTEM: 4)
- 16) CATALYTIC REFORMER UNITS (PROCESS: 6, SYSTEM: 1, 2, & 3)
- 17) ALKYLATION UNIT (PROCESS: 9, SYSTEM: 1)
- 18) LINDE ISO-SIV UNIT (PROCESS: 9, SYSTEM: 4)
- 19) ISO-OCTENE UNIT (PROCESS: 9, SYSTEM: 9)
- 20) MDEA REGENERATION UNITS (PROCESS: 12, SYSTEM: 9, 10, 11, 12, & 13)
- 21) NORTH & SOUTH SOUR WATER TREATMENT SYSTEMS (PROCESS: 12, SYSTEM: 14 & 15)
- 22) SULFUR RECOVERY UNITS (PROCESS: 13, SYSTEM: 1, 2, 3, & 4)
- 23) CLAUS TAIL GAS TREATING UNITS (PROCESS: 13, SYSTEM: 5 & 7)
- 24) MIXED LIGHT ENDS TANK CAR LOADING/UNLOADING (PROCESS: 14, SYSTEM: 2)
- 25) REFINERY VAPOR RECOVERY SYSTEM (PROCESS: 21, SYSTEM: 4)
- 26) SOUTH AREA FLARE GAS RECOVERY SYSTEM (PROCESS: 21, SYSTEM: 10)
- 27) NORTH AREA FLARE GAS RECOVERY SYSTEM (PROCESS: 21, SYSTEM: 11)

THE FLARE GAS RECOVERY SYSTEM SHALL BE OPERATED IN FULL USE WHEN ANY OF THE ABOVE PROCESS(ES) AND SYSTEM(S) IS IN OPERATION. FULL USE MEANS ONE OF TWO COMPRESSOR TRAINS (PROCESS 21, SYSTEM 10 AND PROCESS 21, SYSTEM 11) IS ONLINE AT ANY GIVEN TIME, EXCEPT DURING PLANNED STARTUPS OR SHUTDOWNS WHEN BOTH COMPRESSORS TRAINS SHALL BE ONLINE.

**[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(b)(2)-OFFSET, 5-10-1996]**

**D12.15** THE OPERATOR SHALL INSTALL AND MAINTAIN A(N) INFRARED / ULTRAVIOLET DETECTOR OR A THERMOCOUPLE TO ACCURATELY INDICATE THE PRESENCE OF A FLAME AT THE PILOT LIGHT.

The operator shall also install and maintain a device to continuously record the parameter being measured.

**[RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997; 40CFR 60 Subpart A, 6-13-2007]**

**D323.1** THE OPERATOR SHALL CONDUCT AN INSPECTION FOR VISIBLE EMISSIONS FROM ALL STACKS AND OTHER EMISSION POINTS OF THIS EQUIPMENT WHENEVER THERE IS A PUBLIC COMPLAINT OF VISIBLE EMISSIONS, WHENEVER VISIBLE EMISSIONS ARE OBSERVED, AND ON A BI-WEEKLY BASIS, AT LEAST, UNLESS THE EQUIPMENT DID NOT OPERATE DURING THE ENTIRE BI-

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WEEKLY PERIOD. THE ROUTINE BI-WEEKLY INSPECTION SHALL BE CONDUCTED WHILE THE EQUIPMENT IS IN OPERATION AND DURING DAYLIGHT HOURS.

IF ANY VISIBLE EMISSIONS (NOT INCLUDING CONDENSED WATER VAPOR) ARE DETECTED THAT LAST MORE THAN THREE MINUTES IN ANY ONE HOUR, THE OPERATOR SHALL VERIFY AND CERTIFY WITHIN 24 HOURS THAT THE EQUIPMENT CAUSING THE EMISSION AND ANY ASSOCIATED AIR POLLUTION CONTROL EQUIPMENT ARE OPERATING NORMALLY ACCORDING TO THEIR DESIGN AND STANDARD PROCEDURES AND UNDER THE SAME CONDITIONS UNDER WHICH COMPLIANCE WAS ACHIEVED IN THE PAST, AND EITHER:

- 1). TAKE CORRECTIVE ACTION(S) THAT ELIMINATES THE VISIBLE EMISSIONS WITHIN 24 HOURS AND REPORT THE VISIBLE EMISSIONS AS A POTENTIAL DEVIATION IN ACCORDANCE WITH THE REPORTING REQUIREMENTS IN SECTION K OF THIS PERMIT; OR
- 2). HAVE A CARB-CERTIFIED SMOKE READER\_ DETERMINE COMPLIANCE WITH THE OPACITY STANDARD, USING EPA METHOD 9 OR THE PROCEDURES IN THE CARB MANUAL "VISIBLE EMISSION EVALUATION", WITHIN THREE BUSINESS DAYS AND REPORT ANY DEVIATIONS TO AQMD.

THE OPERATOR SHALL KEEP THE RECORDS IN ACCORDANCE WITH THE RECORDKEEPING REQUIREMENTS IN SECTION K OF THIS PERMIT AND THE FOLLOWING RECORDS:

- 1). STACK OR EMISSION POINT IDENTIFICATION;
- 2). DESCRIPTION OF ANY CORRECTIVE ACTIONS TAKEN TO ABATE VISIBLE EMISSIONS;
- 3). DATE AND TIME VISIBLE EMISSION WAS ABATED; AND
- 4). ALL VISIBLE EMISSION OBSERVATION RECORDS BY OPERATOR OR A CERTIFIED SMOKE READER.

This condition shall become effective when the initial Title V permit is issued to the facility.  
**[RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997; RULE 401, 3-2-1984; RULE 401, 11-9-2001]**

**E193.3** THE OPERATOR SHALL OPERATE AND MAINTAIN THIS EQUIPMENT ACCORDING TO THE FOLLOWING SPECIFICATIONS:

The operator shall comply with all applicable requirements specified in Subpart A of the 40CFR60  
**[40 CFR 60 Subpart A, 6-13-2007]**

**H23.3** This equipment is subject to the applicable requirements of the following rules and regulations:

CONTAMINANT	RULE	RULE/SUBPART
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VOC	DISTRICT RULE	1173
VOC	40CFR60, SUBPART	GGG

**[RULE 1173, 5-13-1994, RULE 1173, 6-1-2007, 40CFR 60 Subpart GGG, 6-2-2008]**

**H23.12** THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES OR REGULATIONS:

CONTAMINANT	RULE	RULE/SUBPART
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BENZENE	40CFR61, SUBPART	FF
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**[40 CFR 61 Subpart FF, 12-4-2003]**

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**H23.29** THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES OR REGULATIONS:

CONTAMINANT	RULE	RULE/SUBPART
SOX	DISTRICT RULE	1118
<b>[RULE 1118, 11-4-2005]</b>		

**II.1** THE OPERATOR SHALL COMPLY WITH ALL THE REQUIREMENTS OF THE CONDITIONS AND COMPLIANCE SCHEDULE AS SPECIFIED IN THE VARIANCE DATED JULY 15, 2008, CASE NO. 5357-36, IN ACCORDANCE WITH THE FINDINGS AND DECISIONS OF THE HEARING BOARD OR AS SUBSEQUENTLY MODIFIED BY THE HEARING BOARD. THE OPERATOR SHALL SUBMIT PROGRESS REPORTS AT LEAST SEMI-ANNUALLY, OR MORE FREQUENTLY IF SPECIFIED IN THE FINDINGS AND DECISIONS. THE PROGRESS REPORTS SHALL CONTAIN DATES FOR ACHIEVING ACTIVITIES, MILESTONES OR COMPLIANCE REQUIRED IN THE SCHEDULE OF COMPLIANCE AND DATES WHEN SUCH ACTIVITIES, MILESTONES OR COMPLIANCE WERE ACHIEVED; AND AN EXPLANATION OF WHY ANY DATES IN THE SCHEDULE OF COMPLIANCE WERE NOT, OR WILL NOT BE MET, AND ANY PREVENTATIVE OR CORRECTIVE MEASURES ADOPTED.

The variance (or Order for Abatement) referenced in this condition does not affect federal or citizen enforceability of the underlying SIP approved rules for which the applicant is receiving the variance (or Order for Abatement).

**[RULE 3004(a)(10(C), 12-12-1997]**